

IN THE CLAIMS:

1. (Currently Amended) A program-changing method for a network comprising at least two nodes that each have a program, [said at least two nodes comprising a first predetermined node and a second predetermined node], said network further comprising a network management system (NMS) coupled to [the first predetermined] a node of the nodes, the method comprising the steps of:

(a) transmitting, by the network management system (NMS), a new program data and a [first] control signal to said [first predetermined] node coupled to the network management system (NMS) disposed in the network separately from the nodes and configured to manage the changing of the programs of the nodes;

(b) allocating a fixed region in a memory within said [first predetermined] node in response to the reception of the new program data, storing the received new program data in the allocated fixed region, and replacing the program of said [first predetermined] node coupled to the network management system (NMS) with the new program data responsive to the control signal;

(c) causing the network management system (NMS) to transmit to said [first predetermined] program-changed node a data-transmitting signal for transmitting the stored new program data to [said second predetermined] a node for program-changing, and transmitting, by the network management system (NMS), a [second] control signal to said [second predetermined] node for program-changing; and

(d) in response to the data-transmitting signal, causing said [first predetermined] program-changed node to transmit the stored new program data thereof to said [second predetermined] node for program-changing.

2. (Currently Amended) The method as set forth in Claim 1, wherein the method further comprising the step of (e) replacing the program of said [second predetermined] node for program-changing with the new program data received from said [first predetermined] program-changed node responsive to the [second] control signal and the step of (f) transmitting by the network management system (NMS) a data-transmitting signal to the program-changed node for transmitting a new program data to a next node coupled to the program-changed node.

3. (Original) The method as set forth in Claim 2, wherein said nodes are arranged in a straight line or a loop in said network.

4. (Previously Presented) A program-changing method for a network comprising a plurality of nodes including a first node and a second node, each of the first and second nodes having a program, the method comprising the steps of:

(a) transmitting a new program data and a first control signal to the first node, said first node being coupled to a network management system (NMS) located in the network remotely from the plural nodes;

(b) changing the program of said first node to said new program data under the control of said control signal;

(c) storing said new program data in a memory means of said first node;

(d) transmitting, by said NMS and to said first node, a command signal to transmit the stored new program data to the second node and transmitting a second control signal to said second node; and,

(e) upon receiving said stored new program data from said first node, changing the program of said second node to said new program data under the control of said second control signal.

5. (Previously Presented) The method as set forth in Claim 4, wherein the plural nodes are arranged in a straight line or a loop in said network.

6. (Previously Presented) The method as set forth in Claim 4, wherein the plural nodes further include a remaining node, said method further comprising the steps of:

(f) storing said new program data received from said first node in a memory means of said second node;

(g) transmitting, by said NMS, a command signal to said second node to transmit said stored new program data in said second node to said remaining node and transmitting said second control signal to said remaining node; and

(h) upon receiving said stored new program data from said second node, changing the program of said remaining node to said new program data under the control of said second control signal.

7. (Previously Presented) The method as set forth in Claim 4, wherein the plural nodes include a third node having a program, said method further comprising the step of repeating the steps (c), (d), and (e) for changing the program in said third node in an iteration in which said second node of a previous iteration becomes said first node, the third node becomes said second node, and a third control signal becomes said second control signal.

8. (Previously Presented) A program-changing method for a plurality of nodes that each have a program, said nodes being arranged in a network having a network management system (NMS) remote from the plural nodes and coupled to one of the plural nodes, the method comprising the steps of:

(a) transmitting a new program data and a first control signal to the one of the plural nodes coupled to said network management system (NMS) which is disposed in the network separately from the plural nodes;

(b) storing said new program data in a memory means of the one node;

(c) changing the program of said one node to said new program data under the control of said first control signal;

(d) transmitting, by said NMS to said one node, a command signal to transmit the stored new program data to another of the plural nodes and transmitting a second control signal to the another node; and

(e) upon receiving said stored new program data, changing the program of said another node to said new program data under the control of said second control signal.

9. (Previously Presented) The method as set forth in Claim 8, further comprising the step of repeating the steps (b), (c), (d) and (e) in an iteration in which said another node of a previous iteration becomes said one node, a third control signal becomes said first control signal, and a fourth control signal becomes said second control signal.

10. (Previously Presented) The method as set forth in Claim 8, wherein a node of said plural nodes other than said one or said another node remains, said method further comprising the steps of:

(f) transmitting, by said NMS, another command signal to transmit said stored new program data in said another node to the remaining one of the plural nodes and transmitting a third control signal to that remaining node;

(g) in response to said another command signal, storing said new program data from said another node in a memory means of said remaining node;

(h) upon receiving said stored new program data from said another node, changing the program of said remaining node to said new program data under the control of said third control signal.

11. (Previously Presented) The method as set forth in Claim 8, wherein the plural nodes are arranged in a straight line or a loop in said network.

12. (Previously Presented) The method of claim 1, wherein said second control signal is identical to said first control signal.

13. (Previously Presented) The method of claim 1, wherein the programs of each of the nodes are identical.

14. (Previously Presented) The method of claim 7, wherein each remaining one of the plural nodes has a program which is updated in a respective additional iteration of the steps c), d) and e) for a current one of the plural nodes by means of a current control signal, wherein said second node of a previous iteration becomes said first node, the current node becomes said second node, and the current control signal becomes said second control signal.

15. (New) The method as set forth in Claim 2, wherein the method further comprises the step of transmitting by said node receiving the data-transmitting signal a new program data to the next node and replacing the program of said next node for program-changing with the new program data received from said node receiving the data-transmitting signal, responsive to the control signal received from the network management system (NMS).